CHWs Get Credit: A 10-Year History of the First College-Credit Certificate for Community Health Workers in the United States

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Community health workers have become increasingly important in the U.S. health care system, playing a significant role in basic health promotion and care coordination; however, their status and visibility have not kept pace with their wider use. A major impediment has been the absence of systematic preparation—the field needs standardized education in programs that emphasize the actual skills and knowledge used by community health workers, programs that attract and retain nontraditional students from underserved communities and that foster professional advancement. This article chronicles the 10-year history of the first college credit–bearing community health worker certificate program in the country to address this need. Systematic research resulted in a program centered on the core competencies universally practiced by community health workers regardless of their topical focus. The certificate program combines performance-based methods with popular education into an innovative pedagogical approach that teaches skills, while solidifying, contextualizing, and enhancing crucial experiential knowledge. Program outcomes validate the approach.

Keywords: *community health workers; community colleges; evaluation of training; health promotion; health workers; outreach; performance-based training; popular education; training*

Community health workers (CHWs) "promote healthy living by educating about how to prevent disease and injury and by helping community residents understand and access formal health and human service systems" (Rosenthal, Wiggins, Brownstein, & Johnson, 1998, p. 1). Within the past 40 years, CHWs have been increasingly incorporated into community health promotion and primary health care programs in the United States, particularly in underserved communities. National and state surveys show that some three fourths of CHWs are from communities of color (Love, Gardner, & Legion, 1996; Rosenthal et al., 1998). Because they are generally indigenous to the communities in which they operate, sharing common language, ethnicity, socioeconomic status, or life experiences, CHWs draw on their insider status and understanding to act as culture and language brokers between their own community and systems of care. As such, they are perceived by community members to be important sources of information on health issues and on how to access services. CHWs do basic health advising and promotion and link community members to health and social service systems. This article focuses on the development of a comprehensive educational program for CHWs employed in outreach and clinic-based settings. The curriculum is organized around the core competencies needed by all CHWs whether they work in prevention, primary care, or in dedicated health-topic focused programs. Having emerged from a different process, these five core competencies are worded differently from the competencies listed in the National Community Health Advisor Study (NCHAS) but are entirely compatible with them (Rosenthal et al., 1998).

Despite their consistent use for more than 4 decades, CHWs still have not been fully integrated into the U.S. health workforce. Although reports on the primary care workforce have discussed CHWs as important and underrecognized (Pew Health Professions Commission, 1994; Witmer, 1995), an exhaustive 1999 report on the allied health workforce—by far the largest subset of the health workforce—did not even mention community

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health workers (Ruzek, Bloor, Anderson, Ngo, & Professions, 1999). The NCHAS (Rosenthal et al., 1998) made a number of recommendations to address this problem, which included creating academic linkages for CHW training and education; establishing CHW core curriculum guidelines; establishing multiprogram CHW education and support centers; developing best practice guidelines for programs; and finally, preparing CHWs and CHW programs to compete in the changing health system. Witmer (1995) and other members of the Pew Health Professions Commission have warned that displacing natural CHW skills and experiential knowledge with the biomedical health system's values and methods may undermine their effectiveness within their communities. Any educational program for CHWs must be carefully designed to also nurture crucial experience-based abilities.

At the same time, our regional research and, independently, the national research conducted for NCHAS suggest that standardized education is important to CHW acceptance, use, and professional development. To some extent, the question of whether education for the field should be standardized may be moot. The pressures of a third-party payer system push the field in that direction. Evidence of this can be found in recent legislation passed in Texas that requires all CHWs who receive compensation to be credentialed, and in discussions of credentialing in national and regional CHW forums. This shifts the focus from the question of whether to standardize, to the question of how (a) to standardize, while (b) retaining the experiential skills, innate qualities, and community-oriented values at the heart of the profession. Our curriculum and the outcomes from our program have demonstrated that it is possible to design a certificate that meets both of these requirements.

Community Health Works of San Francisco was created as a partnership of the Department of Health Education at San Francisco State University and the Health Science Department at City College of San Francisco with the specific aim of conducting applied research on CHWs to define and clarify their professional roles, and to improve CHW education. The partnership between San Francisco State, a research institution, and City College, a community college, enabled us to take advantage of the resources of each institution, crucial to the multipronged efforts required to develop a well-researched, carefully planned, and classroom field-tested curriculum. Six years of funding by the U.S. Department of Education Fund for Improvement of Post Secondary Education (FIPSE) and others was critical, allowing us to consolidate progress as we developed, evaluated, and adjusted the curriculum of the first college credit–bearing certificate program for CHWs in the nation. We are aware of one earlier college CHW course. However, based on a thorough search, to our knowledge, Community Health Works was the first to establish a sequence of courses and to issue a credit-bearing certificate. After an overview of the social and economic forces working to increase the need for CHWs, we present our research and the resulting curriculum and discuss their implications for the present and future of our program, the field, and public health and health promotion in the United States.

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TRENDS DRIVING LABOR MARKET DEMAND FOR CHWs

Three economic, social, and demographic trends drive the labor market demand for well-prepared community health workers. First is the dramatic structural and organizational transformation of health care in the United States, which increases a need for health workers who can help people develop health literacy and navigate complex, fragmented health and social service systems. This structural change includes such features as the spread of managed care, the concurrent shift of care out of hospitals to ambulatory care clinics and homes, and growing numbers of uninsured.

Tasks and responsibilities are steadily devolving onto health professionals and staff at the lower ends of the occupational hierarchies, and more is being asked of patients. Today, families must deal with complex organizational systems, obtain and act on health information, and participate in sometimes difficult home-based self-care activities. In addition, there are 42 million people in the United States who have no health insurance, many of whom rely on the health safety net institutions that are the primary employers of CHWs (Himmelstein & Woolhandler, 1996). In California, 25% of the population has no insurance, including 42% of the Latino community, 22% of Asians and Pacific Islanders, 23% of African Americans, and 15% of non-Latino Whites (Schauffler et al., 2000).

The second trend pushing demand for CHWs is the fundamental shift in the ethnic/racial composition of the United States, and its increasing linguistic diversity,

led by states such as California and by many urban areas. Census Bureau results for the year 2000 indicate that people of color—here defined as those who claim Hispanic/Latino ethnicity, or identify as Black, American Indian/Eskimo/Aleut, or Asian/Pacific Islander—constitute more than 30% of the population (U.S. Census Bureau, 2001). In California as of the year 2000, people of color now constitute more than 50% of the total population (Purdum, 2000; U.S. Census Bureau, 2001). California—the most diverse state in the United States—is home to more than 200 language groups. More than one fourth of Hispanic households, and almost one third of Asian/Pacific Islander households, in California were identified as linguistically isolated by the 1990 U.S. Census (though race/ethnicity information for the 2000 census has been compiled, language results have not yet been made available) (U.S. Census Bureau, 2000). In San Diego, for instance, 65% of hospital patients are monolingual in Spanish, whereas a mere 1% of registered nurses (RNs) are Latino/Latina (McGraw & Newkirk, 1995).

These demographic changes, together with concerted advocacy, catalyzed an array of recent federal and state laws and regulations requiring health systems to provide culturally and linguistically appropriate services. Such measures have been passed by the Health Care Financing Administration (2000), the Department of Health and Human Services (Office of the Federal Register, 2000), and the Joint Commission on Accreditation of Healthcare Organizations (Smith & Gonzales, 2000). Given a persistent shortage of bilingual clinicians and nurses, such requirements are creating strong demand for bilingual and bicultural CHWs (Love et al., 1996).

The third trend driving labor market demand for community health workers is an increased emphasis on preventive and primary care as an alternative to hospitalization (in part a product of health care system reorganization). Witmer (1995) and Swider (2000) have reviewed an array of studies in the United States that have demonstrated the efficacy of using CHWs to educate populations about health issues. CHWs, they found, increase access to prenatal care and other preventive services; increase early cancer detection and rates of immunization; decrease low birth weight and infant mortality rates; help control hypertension; and facilitate smoking cessation. Internationally (particularly in developing nations), and in the United States, the use of CHWs has also demonstrably improved health knowledge, behaviors, and outcomes for a wide variety of other chronic conditions (Birkel et al., 1993; Black, Dubowitz, Hutcheson, Berenson-Howard, & Starr, 1995; CDC AIDS Community Demonstration Projects Research Group, 1999; Corkery et al., 1997; Cunningham-Williams et al., 1999; Schwarz, Grisso, Miles, Holmes, & Sutton, 1993; Walt, 1990; Watkins, Larson, Harlam, & Young, 1990; Wolff et al., 1997; World Bank, 1993). CHWs, the research suggests, provide effective health promotion and preventive services, bridge cultural and linguistic barriers to care, and help individuals successfully navigate complex health care systems. In recognition of such evidence, and faced with increasing constraints in health care financing, national and state entities called for the greater use and institutionalization of CHWs (Levine, Becker, & Bone, 1992; Levine et al., 1994).

Despite increasing demands for CHWs, however, major weaknesses in their preparation need to be addressed before they will be more widely accepted throughout the health services sector (Akinyanju & Anionwu, 1989; Ennever, Brooks, & White, 1990; Ennever, Flah-O'Sullivan, Smith, & White, 1988; Ennever, McFarquhar, White, & Desai, 1990; Gilson et al., 1989; WHO Study Group, 1989; Witmer, 1995). Issues of uneven skill development and education, lack of acceptance by other health professionals, and lack of agreed-on standards of practice are synergistic problems undermining their efficacy and use. If we are to meet labor force demand for CHWs, education must develop toward standardized competencies and assessment tools that at the same time retain the heart of CHWs' effectiveness—their roots in and knowledge of their communities. We designed our CHW certificate program to do just this.

DEVELOPMENT OF A PERFORMANCE-BASED, POPULAR EDUCATION CURRICULUM

To develop our certificate, we first had to define the field of community health work and articulate its core skills and knowledge. Second, we had to develop a standardized and effective educational program organized around these skills and knowledge.

We eventually settled on the performance-based approach to teaching and assessment, combined with popular education pedagogy, for several reasons. The performance-based approach evaluates students not by traditional testing methods but by demonstrated competency in necessary skills. This is particularly appropriate for nontraditional students who have a wealth of practical skills but may have weak academic preparation. It also benefits employers, giving them the assurance of knowing what skills CHW certificate program graduates will bring to their organizations, and what additional on-the-job training might be needed.

Popular education, because it uses students' life experiences as an educational tool, deeply engages them, improving retention of students from the underserved communities in which a majority of community health workers are needed and, in fact, work. Placing those life experiences into a larger context enables students to gain the big-picture understanding of the social and political determinants of health, knowledge important to their helping patients manage in an immense and changing health care and social

safety net system. Popular education makes the classroom into a crucible for the exploration of cultural differences as represented by the members of the class, offering hands-on experience for working respectfully and effectively with an ethnically and racially diverse clientele. In addition and perhaps most important, popular education enhances and builds on, rather than displacing, students' deep experiential knowledge of their communities' needs. Through this combined pedagogical approach, CHWs learn to bridge the often-disparate worlds of their communities, and the professional health care system, while maintaining their facility and credibility within both.

To arrive at the overall structure and content of the certificate, we undertook a systematic process of curriculum development. This process consisted of four overlapping stages: (a) a series of focus groups to identify the scope and mission of the educational program, (b) systematic regional and state surveys designed to profile the CHW labor market, (c) a comparative analysis of job descriptions, and (d) the implementation of a Develop a Curriculum (DACUM) job task analysis in concert with community health workers. Program milestones are summarized in Figure 1.

1988	Community focus groups with African American, Latino/Latina, and Asian Pacific American community leaders.
1992	Two focus groups with CHWs, one focus group with CHW supervisors. California labor market survey. Pilot of 10-unit curriculum.
1995	Seventeen-unit Certificate approved by CCSF; first cohort of students enters full 17-unit curriculum. Comparative analysis of CHW job descriptions.
1996	Bay Area regional labor market survey. DACUM workshop.
1998	Finalized performance-based examination.
2000	Completed *Standards of Practice* manual.

FIGURE 1 Milestones in the Development of a Performance-Based Community Health Worker Certificate Program

Stage I: Focus Groups to Identify the Scope and Mission of an Educational Program

In the fall of 1988, the San Francisco State University Department of Health Education was awarded a state grant to conduct a series of six focus groups with leaders from San Francisco's African American, Latino, and Asian Pacific American health agencies. These community leaders told us that people in their communities were already doing health promotion but needed to develop and validate their skills. Further education, they felt, should take place in an academic setting that would open up career pathways to its students. It is interesting that in the late 1980s, no one in the focus groups used the term *community health worker.*

In October of 1992, we conducted three additional focus groups to detail the educational needs of these community health educators and promoters (Love & Gardner, 1992). By that time, the term community health worker was being used. Two focus groups consisted of CHWs, while a third was made up of CHW supervisors and program leaders, including members of the California Conference on Local Health Officers. We explored how CHWs were trained, how their performance could be strengthened, how they were supervised, and sought suggestions for the certificate program curriculum.

Stage II: Regional and State Surveys of the California CHW Labor Market

A second preparatory stage for the development of the curriculum entailed state and regional labor market surveys of health employers. In 1992, we surveyed a convenience sample that included 185 large employers of health care personnel throughout California (Love & Gardner, 1992). In addition to information on CHW demographics, topic areas, and employment settings, we found that training for CHWs across the state resembled an incoherent patchwork, without a clear vision of the job-related competencies that CHWs must possess to be effective. Length of training was generally brief but varied widely, from 20 hr to 120 hr (see also Walker, 1994). CHWs accumulated certificates of workshop completion on disconnected topics, certificates that were not conducive to professional advancement or mobility between employers. Such piecemeal training offered little opportunity to develop conceptual frameworks or systematically to build core competencies. The need for better CHW preparation was so widely acknowledged that 85% of employers in the sample reported that they would grant release time to workers undergoing CHW training, and nearly 60% said they were willing to provide tuition support.

In 1996, we followed our initial convenience survey with a systemic labor market analysis of CHWs (Love et al., 1996). We selected a stratified random sample of health care service providers in eight northern California counties and conducted a mail and telephone survey with a 76% response rate ($n = 197$). Those 62 organizations that had CHWs on staff in 1996 employed a total of 504 CHWs; their work, gender, racial/ethnic, and educational profile is summarized in Table 1. Most (95%) of the surveyed organizations provided some on-the-job training for their CHWs, and 80% offered more formal training. The majority (62%) was composed of short, topical trainings as opposed to the more comprehensive, competency-based training found in a small proportion (27%) of other organizations.

These results reflected others' findings (Lamptey, White, Figueroa, & Gringle, 1992) that the training offered to many health care workers is based on erroneous assumptions. For example, one author observed outreach workers in an STD training center sitting through extensive lectures by doctors on diagnosis and treatment, competencies entirely outside CHWs' scope of practice.

Stage III: Comparative Analysis of Job Descriptions

In 1995, we conducted a comparative analysis of job descriptions of CHWs working in the seven major areas as identified in our statewide survey: in-clinic primary health care, outreach community health work, reproductive health, women's health, social services, drug and alcohol treatment, and community nutrition. The objective of this comparative analysis was to catalog the core duties performed across the majority of topical specialties, principal settings, and most prevalent titles in the CHW cluster. Of 24 job duties, 21 were common to five or more of the seven job titles, demonstrating a very high level of overlap between the competencies required in the various specialties regardless of topical focus. These duties, including, for example, skills for client intake, care coordination, and health advising, then became the process competencies (see Figure 2) that constitute a central element of our certificate's core curriculum (Quijano, 1996).

Stage IV: Developing a Curriculum (DACUM) Job Task Analysis

After a search of national databases revealed no existing task analysis of CHW work, we convened a DACUM workshop in the spring of 1996, facilitated by the Spokane Community College DACUM Resource Center. DACUM is a widely used method for the analysis of occupations and determination of required competencies (Norton, 1997). The process identifies what a given job task looks like when being performed at the mastery level. Twelve workshop participants with 2 to 3 years of full-time experience were nominated by veteran CHWs or their employers, based on their high performance. The DACUM process confirmed the results of the job description analysis and formed the basis for student proficiency assessment tools, which ultimately evolved into the performance-based examination and *Core Competencies in Community Health Work: Standards of Practice* (Community Health Works of San Francisco, 2000).

THE PERFORMANCE-BASED POPULAR EDUCATION CURRICULUM IN CHW GENERALIST COMPETENCIES

The CHW generalist certificate consists of 17 semester units of credit (equivalent to roughly 435 classroom hours) from the Health Science Department at City College of San Francisco. It is intended to help working CHWs sharpen and validate their skills, and to prepare other interested community members in community health work. Full-time students can complete the certificate in 1 year. Most working students attend classes one to two evenings per week, completing the program in three or four semesters.

The content of the curriculum is subdivided into the core curriculum and specialty areas (summarized in Figure 2). The core curriculum combines the development of critical process competencies (boxes I and II) with instruction in important topical and system knowledge (boxes III and IV). It is designed to give each learner a background in essential knowledge and attitudes and to ensure that any CHW completing the certificate has a solid grasp of the core competencies required for health promotion and primary health care. The curriculum thus introduces some of the competencies central to more advanced work in health education.

TABLE 1
Characteristics of CHWs Employed by a Northern California Sample of Health Care Organizations, 1996

Characteristics of CHWs	*Percent*[a]
Work organization	
County health departments	63
Community-based organizations or clinics	35
National organizations	2
Topical area of work	
HIV/AIDS/STDs	28
Maternal child health/perinatal	16
Alcohol and drug abuse	11
Primary care	10
Other	36
Sources of funding for positions	
Hard-money ongoing funding	56
Soft-money grants	42
Other	3
Gender	
Women	66
Men	34
Race/Ethnicity	
African American	30
Latino/Latina	27
Non-Latino White	23
Asian Pacific Islander	17
Native American	2
Other	1
Formal education	
High school degree or less	58
Associate degree	19
Baccalaureate degree	23

NOTE: CHWs = community health workers.
a. Totals may not add up to 100% due to rounding.

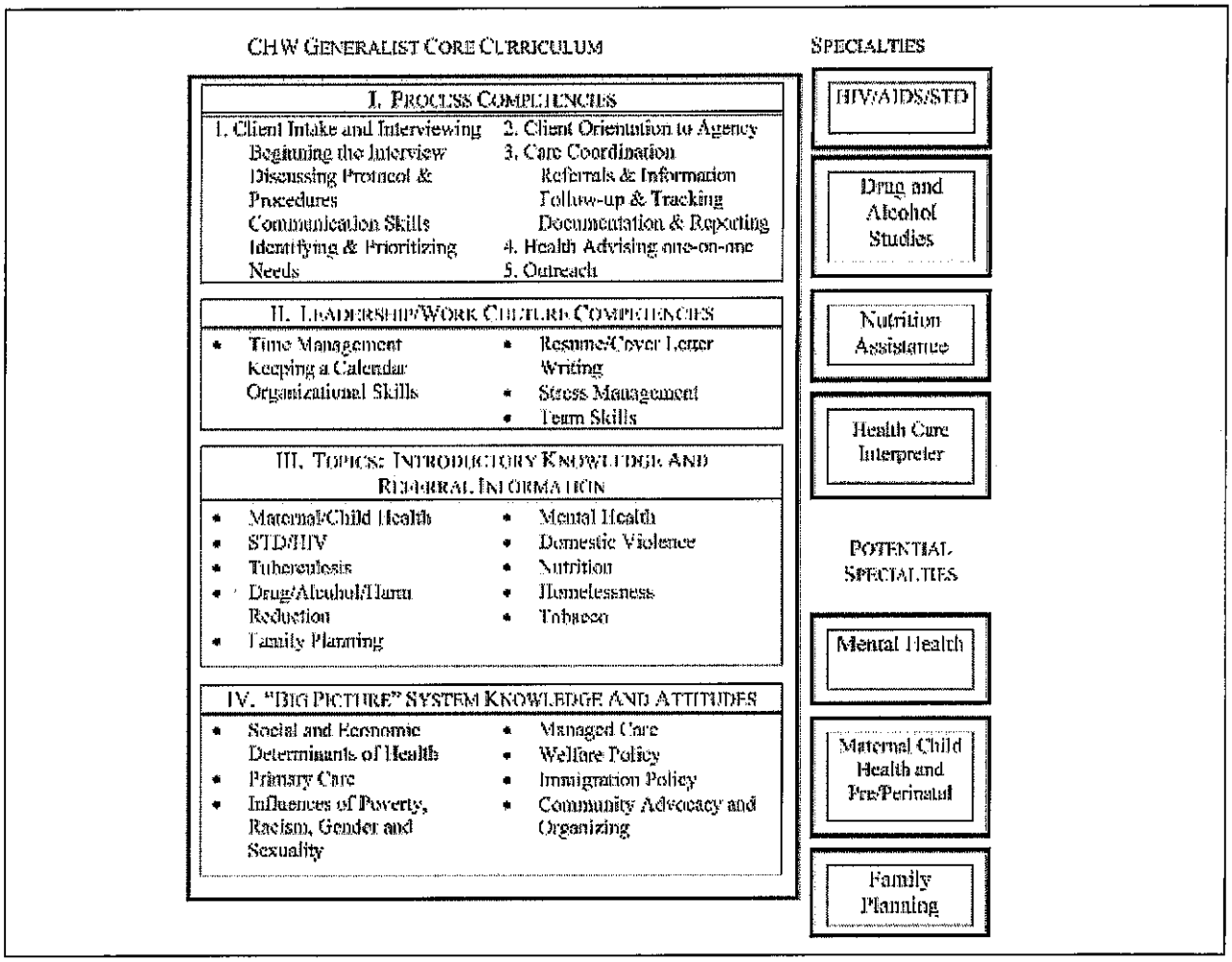

FIGURE 2 The CHW Generalist Certificate Core Curriculum and Specialties

Our research identified a set of five process competencies (skills common to and required for most community health worker positions regardless of topical focus) (see Figure 2, box I): Four of these—client intake and interviewing, client orientation to the agency, care coordination (or basic case management), and one-on-one health advising—apply to all CHWs. Although it is not universally employed by CHWs, we include a fifth core competency—outreach—because we found that a significant number of CHWs are doing outreach on a regular basis.

A second element of our certificate program entails instruction in overall leadership/work culture competencies (Figure 2, box II) such as time management, self-organization, communication skills, conflict resolution, and resume writing.

Each CHW also needs content knowledge. First, CHWs must have broad familiarity with common health conditions, enabling them to do basic health advising and promotion, and to know when a client or patient needs referral to more information and services. Our required core program includes introductory knowledge and referral information on 15 topical areas (Figure 2, box III). These areas were chosen by identifying the primary topical areas in which CHWs work, and integrating the results of ongoing discussion with working CHWs. Future developments in the program will incorporate the 26 priority areas in *Healthy People 2010* and the six health conditions highlighted in the national campaign to eliminate racial disparities in health. In addition, we developed our program so that the CHW generalist certificate can be combined with specialty certificates in particular health topic areas (listed along the right side of Figure 2).

Finally, the core curriculum builds a base of knowledge about overarching policy issues as well as social, political, and cultural determinants of health (Figure 2, box IV). Such big-picture concerns include topics such as managed care, primary care, multicultural competence, Medicaid and Medicare, and immigration and

welfare policies. These issues disproportionately affect low-income, non-White, urban communities. Comprehending them is therefore critical to helping CHWs understand the systems in which they work and the social context in which their communities live and prepares CHWs to be powerful advocates for individual clients and for their communities.

This curriculum design significantly improves on current practice. Our standardized curriculum based on universal core CHW competencies means, for the individual CHW, greater professional mobility and opportunities. With specific professional competencies clearly identified, the relationship to other fields, such as health education or public health, becomes apparent, enabling professional and educational mobility. Compared to piecemeal topical workshops, a core program provides more opportunity to develop conceptual frameworks, critical thinking, and a contextual understanding of the social and economic determinants of health—it is not simply narrow training for lever pullers. In a similar vein, it encourages CHWs to view patients as whole human beings, rather than as a collection of isolated organ systems or diagnoses. Performance-based methods overcome one of the hurdles to teaching CHWs in higher education settings—the fact that traditional paper-and-pencil evaluation favors students from homes that are rich in academic capital, while disadvantaging others whose cultural, linguistic, and social competencies may, in fact, qualify them as ideal candidates for community health work. A standardized and competency-based curriculum also provides potential employers and program graduates with a clear and mutual understanding of the skills and knowledge base that can be expected of CHW program graduates. Finally, the incorporation of popular education helps ground process competencies and topical health knowledge in a solid understanding of the larger cultural/systemic hurdles and resources CHWs will encounter. The usefulness of this approach was recognized by the largest employer of CHWs in the city and county of San Francisco, the San Francisco Department of Public Health, which has designated completion of our CHW certificate as one of the ways in which one may qualify to be hired in the health worker civil service series.

EVALUATION OF THE CURRICULUM

Three main outcomes have guided our assessment of the efficacy of the program: retention, career outcomes, and student proficiency (see Table 2).

The certificate program was explicitly designed to attract and to maximize retention of students from the communities in which CHWs largely work, communities often un- or underinsured so dependent on the social safety net, as well as communities facing linguistic and cultural barriers to health care. As intended, the program has indeed attracted a nontraditional student population, many of whom are poor or working poor. A large majority (79%) of the program's students have been persons of color, 79% women; most have been low-income, often in their 30s or older. Many have work and family responsibilities, and though most have completed high school, they are quite likely to be the first in their families to attend college. Many of the students have had to address complex problems, including homelessness, drug addiction, domestic violence, and recovery.

In addition to incorporating popular education pedagogy, the two most important tools we developed to increase retention included a prerequisite course to improve selection/admissions and the use of learning teams in the classroom. Required prior to admission to the program, Health 59: Introduction to Community Health introduces students to the career and demonstrates, for students who complete the class, a student's ability to commit to and accomplish such a class's requirements. The requirement that students arrange for themselves, and complete, an internship demonstrates that a student has initiative of the sort needed to complete the CHW program. Use of learning teams had the added benefit of ensuring that students receive substantial practice in the communications skills taught early in the program, and essential to CHW work. Over the course of 1995 to 1998, these methods were refined, allowing the program to successfully double class size while keeping our retention rate at 84%.

A second test of the certificate program's effectiveness is the rate at which students who complete the program are able to find full-time, paying jobs as CHWs, or, if they had been working as CHWs previously, the extent to which they are promoted based on their enhanced skills and knowledge. From 1994 through 1997, we used postprogram telephone surveys, conducted 1 year after students completed the core course sequence, to evaluate career outcomes. Across these three academic years, 64% ($n = 35$) of entering students overall were already employed as CHWs but were seeking professional development; of these, 77% ($n = 27$) received promotions. Of the remaining 36% ($n = 20$) of students who entered without previous jobs as CHWs, 85% ($n = 17$) obtained full-time employment as a CHW ($n = 12$) or became full-time students ($n = 5$). In short, a total of 85% of those surveyed reported a positive career outcome. Respondents attributed these outcomes to their participation in and completion of the CHW certificate.

With a good track record in student retention and career outcomes, we turned our attention to developing a more sophisticated measure of student learning. Starting with the 1997-1998 academic year, we focused our evaluative efforts on administering a performance-based examination to assess student progress. The examination involves simulating an encounter with a standardized client in a clinic, during which students are asked to perform certain competencies and are rated

TABLE 2
Summary of Outcomes Evaluation Data for CHW Certificate Program

Academic Year	*Outcome Measured*	*Instrument Used*	N	*Response Rate % (n)*	*Results*
1993-1994	Student proficiency	Self-Rated Mastery of Competencies (paired *t*-test)	36	94 (34)	($p < .0001$)
1994-1995	Positive career outcomes[a]	Postprogram survey	20	90 (18)	72% (13) Positive career outcome[a]
1995-1996	Positive career outcomes[a]	Postprogram survey	26	65 (17)	88% (15) Positive career outcome[a]
1996-1997	Positive career outcomes[a]	Postprogram survey	22	91 (20)	80% (16) Positive career outcome[a]
Cumulative 1994-1997	Positive career outcomes[a]	Cumulative postprogram surveys	68	81 (55)	80% (44) Positive career outcome[a]
1997-1998	Student proficiency	Pre- and postperformance exam (paired *t*-test)	45	84 (38)	Pass rate: 16% pretest, 82% posttest ($p < .0005$)
1998-1999	Student proficiency	Pre- and postperformance exam (paired *t*-test)	30	90 (27)	Pass rate: 59% pretest, 85% posttest ($p < .001$)
1999-2000	Student proficiency	Pre- and postperformance exam (paired *t*-test)	39	69 (27)	Pass rate: 30% pretest, 77% posttest ($p < .001$)

NOTE: CHW = community health worker.
a. Positive career outcome indicates that the student either obtained a CHW position, received a promotion, or continued full-time education.

using a detailed proficiency checklist. Examiners unknown to the students and independent of the program staff administer the exam and score the students. CHW employers reviewed the scenarios and proficiency checklist, confirming that they realistically reflect actual CHW work demands and performance standards.

Students undergo the exam at the beginning, and then again at the end of the certificate program. Cumulatively from 1997 to 2000, 33% received a passing grade of C or better on the pretest while 81% passed the posttest. The increases represent a substantial and statistically significant ($p < .001$) improvement in student proficiency as a result of completing the CHW coursework.

ONGOING AND FUTURE EVOLUTION OF THE CURRICULUM

The evolution of our curriculum is proceeding on three main fronts. The first involves our ongoing efforts to make the program a stepping-stone to higher education in the field of health care, through our transfer program from City College to San Francisco State University. Second is our progress in developing specialty content certificates, as well as trainings and educational materials, to complement the CHW generalist certificate and program. In addition, finally, we are engaged in disseminating our program, and building connections with other such programs, on a state and national scale.

Our original focus groups had stressed that they wanted something that would not be another dead-end vocational program, but would open up educational pathways to develop the leadership skills of grassroots community health leaders. To address this problem, we developed an articulated pathway from City College to San Francisco State. From the CHW generalist certificate, a student may complete an associate's degree, or transfer to San Francisco State's bachelor's and master's degree programs.

The transfer agreement recognizes 12 units of CHW program credits in the health education major at San Francisco State. The CHW program introduces students to a number of competencies further developed within the health education bachelor's and master's degrees. A class project requires students, in teams, to conduct a community health needs assessment, determine a health education priority area, and produce a public health educational poster addressing the area of concern. In the CHW internship, students design educa-

tional programs in accordance with their internship site's program objectives and work with community organizations, resource holders, and potential participants to develop an effective plan. In the area of individual health advising, students learn to identify those factors (including social, cultural, economic, political, and other) affecting clients' abilities to maintain good health. They also assess client learning styles and literacy levels, to tailor health advising to each client's needs and comprehension. If students choose to participate in the transfer program (dubbed the "Health Train"), they receive substantial further training in these areas in the health education major and the master's of public health (MPH) program at San Francisco State, together with the other competencies constituting these degrees. To date, one student has completed a CHW certificate, transferred to San Francisco State, and graduated with a master's in public health. Several other students are in the pipeline.

The second area of current program growth lies in our specialty certificates and trainings, which we see as complements to the CHW generalist certificate. We strongly feel that college credit–bearing certificate programs should not be required hurdles for entrée into community health work, nor should they be the only path into the field. Too often, higher education has been financially or academically inaccessible to community people, and numerous CHWs excel in the field without benefit of college study. Our research found college credit–bearing CHW programs are needed by the field as one such path, for reasons of professional development and breadth of study. Although our briefer, 40-hr concentrated trainings have been designed to fulfill a different need, we nevertheless incorporate into them what we have learned as we developed our for-credit certificate program.

In 1997, the Centers for Disease Control and Prevention asked us to develop a curriculum for community health workers in asthma, as part of their ZAP Asthma program. We are currently involved in a countywide upgrade of asthma care for low-income children, through our participation in the YES WE CAN Urban Asthma partnership funded by the California Endowment, and are developing the YES WE CAN Toolkit of training and implementation materials for distribution statewide. For YES WE CAN, we have taken the educational principles and core competencies developed in our certificate program and applied them to training CHWs in the topic area of asthma. Initial results of the YES WE CAN program are extremely promising and have encouraged us to discuss developing similar educational materials to prepare CHWs in the management of other chronic diseases.

We have also developed or incorporated specialty topic certificates at the community college level, which students may complete in addition to the generalist certificate, in topic areas in which community health workers most often work or are increasingly needed: the drug and alcohol counselor certificate, the HIV/STD educator certificate, and the health care interpreter certificate. Additional specialty certificates may be developed in the future for other areas of significant CHW employment.

The third significant arena of evolution of our program lies in dissemination. An important part of our commitment to credit-bearing CHW educational programs is to share with and spread our curriculum to other interested community colleges. A FIPSE grant supported the dissemination of our curriculum to several colleges from around the country. Representatives of a number of community colleges, as well as community health professionals and officials from some of their regions, attended our Train-the-Trainer CHW Dissemination Conference at San Francisco State University in March 2000. As part of our dissemination efforts, we will also be publishing the educational materials that we have developed over the past 10 years, which constitute a comprehensive introduction to the field of community health work, *Community Health Now* (forthcoming).

When we began our certificate program, we were the only institution in the United States offering a college credit–bearing certificate for CHWs. More recently, alongside our dissemination efforts, a number of other sites have begun to develop college-supported CHW courses, under a range of credit-bearing and non-credit-bearing structures. At the 2001 meeting of the American Public Health Association, we cohosted, with the University of Arizona, a meeting of representatives of college-supported CHW programs, and are working toward developing a national network of such programs as a forum in which to exchange lessons learned, program development experiences, and in which collectively to discuss and address such questions as what role college-supported programs should play as the profession of community health work matures and locates itself within the larger health care system.

CONCLUSION

Ongoing structural changes in health care and an increasingly diverse population are expanding demand and opportunities for CHWs. A successful shift from highly interventionist, curative care to prevention and health maintenance—motivated not only by cost concerns but also by growing focus on holistic notions of well-being—is predicated on the system's ability to reach out to all sorts of communities, comprehensively to follow up with patients/clients through a complex service network, to educate individuals and communities on self-care and behavior change, and to organize community-level and policy interventions. A considerable body of research shows that these are precisely the areas in which community health workers are able to have the greatest impact on health outcomes. The certificate program for community health workers described

in this article represents part of an ongoing endeavor to enhance their effectiveness, increase their acceptance and diffusion throughout the U.S. health care system, and more firmly establish their rightful place within the health care process. The potential implications of greater use of CHWs include substantial improvement in the health of the general population. They have immense potential to help address the entrenched problem of health inequalities by reaching underserved communities. Moreover, they work to improve the quality of life for those they serve, by helping to empower patients and communities, through education and advocacy, to take charge of their own health.

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